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ABSTRACT

This presentation reports research findings which link children's social-emotional skills at ages 4 and 6 to concurrent and antecedent verbal interaction behaviors of their mothers. Forty-five low-income mothers and children who voluntarily participated in the Mother-Child Home Program of the Verbal Interaction Project from 1972 to 1974 were assessed by home visitors who modeled interactive skills in home play sessions centered around gifts and toys and books. Mothers were rated on behaviors related to verbal interaction, nurturance, encouragement of autonomy, and parental controls. Children were rated on task and cognitive orientation, independence, cooperation, and emotional stability. At age 4, children's behavior traits were found to correlate significantly with aspects of their mothers' verbal interactions with them. Almost all child task orientation and cognitive orientation measures were linked to mothers' verbal interactions. The children were later assessed at age 6 among classmates in school settings by teachers who used the behavior rating instrument previously employed. Many correlations between mother's verbal interaction measures obtained when the children were age 4 and measures of the children's behavior at age 6 were found. Three kinds of antecedent verbal interaction had continuing influence: mother responds verbally to child's request, tries to converse with child, and verbalizes reasons for obedience. (Author/RH)

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THE PARENT-CHILD NETWORK:
THE VERBAL INTERACTION COMPONENT^{1,2}

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THE PARENT-CHILD NETWORK: THE VERBAL INTERACTION COMPONENT

Washington University, Central Institute for the Deaf

International Conference on Parents and Young Children, St. Louis, June 20, 1978

Phyllis Levenstein, Verbal Interaction Project

That parents influence the behavior of their children for good or for ill has become a truism. Surprisingly, we know more about the ways parents can be a destructive influence than about their favorable influence on children's social-emotional competence in dealing with the world of persons and tasks around them, and with their own inner emotional states. As recently as 1977, at the end of an important book describing a very large, painstaking study of the longitudinal persistence of social-emotional strengths and problems in 1200 children in day care centers, followed from preschool into fourth grade, its author asked, "Is the home life of children who recover more supportive and growth promoting than that of children who remain disturbed?...We know relatively little of the antecedents of emotional health" (Kohn, 1977, pages 265-266).

It is not quite enough to hold simply to a belief that good parenting is an antecedent of children's good social-emotional functioning. What specific behaviors go into good parenting? And is such parenting in early childhood indeed a source of social-emotional strength in later childhood?

A number of investigators of parent-child interaction have made a good start in trying to answer these questions (Clarke-Stewart, 1973; Radin, 1971; Seitz & Stewart, 1975; White & Watts, 1973). During the course of our own work over the last ten years, the Verbal Interaction Project has had a rare opportunity to gather empirical data on parent-child interaction. The information came through direct observations of mothers and their preschool children together in their homes, and of the same children later in elementary school. We had two primary interests; to measure the effects of our Mother-Child Home Program on parents' parenting and on children's social-emotional competence; and to explore the more basic question of whether, and

and how, parents -- particularly mothers--influence their children toward social-emotional competence. We hoped to find answers useful to parents and teachers as well as to ourselves and science. The population for which we intended our Program were low income mothers and their preschool children considered vulnerable, because of low income status, to later academic and behavior problems in school. Your interest is focused on children with communication disorders. The two sources of vulnerability are far apart, but perhaps our study has something useful to tell both of us.

The Verbal Interaction Project's observations were of 45 mothers and their four year old children in their homes. Direct observations are methodologically troublesome but are much more reliable than the self-reports given in interviews with parents (McCord & McCord, 1961). We rated the mothers on observable, concretely defined, desirable parenting behaviors, and we rated the children on observable, concretely defined, desirable social-emotional behaviors. Our criteria for "desirable" may be open to debate but were not idiosyncratic, being a reasonable distillation of goals for mothers and children expressed by human relations experts, both famous and obscure, and found in the professional literature over the last 50 years. We wondered if we would see, at the child's age of four years positive relationships between what parents did and how their children acted. Even more we wondered if any relationships we found would endure into the child's school years. Specifically, we wanted to know if the ratings of children's competence by their teachers in the classroom two years later would correlate with mothers' parenting behavior when the child was four years old.

The 45 mothers and children were participants in the Mother-Child Home Program, which had been developed and was being tested by the Verbal Interaction Project. They had entered the program in October, 1972, and completed it in May, 1974. They were known as the 1972 Cohort. The 1972 Cohort was similar in background to the 636 other low income families which have entered the Verbal Interaction Project in yearly cohorts: the families were eligible for low income housing; most of the fathers had occupations which were no higher than semi-skilled; the average education for both parents was about tenth grade; 35% of the fathers were absent from the home, with about the

the same proportion of mothers receiving welfare aid; and two thirds of the families were socially defined as Black.

To prepare to answer the questions about mother-child relationships, we started off ten years ago by beginning to develop two new instruments, (no suitable ones being then available), one to measure children's social-emotional coping skills, and one to measure parenting skills. The first we eventually called "Child's Behavior Traits", or CBT. The second became "Parent and Child Together", or PACT. Both were composed of Likert-type scales yielding item and summative scores, all going in a positive, mental-health oriented direction. Both have demonstrated reliability and validity. (Samples of both instruments can be obtained from the Verbal Interaction Project, 5 Broadway, Freeport, New York 11520)

"Child's Behavior Traits" was created on the basis of staff experience, accumulated in our several lifetimes of experience as psychologists, social workers, and teachers, with heavy reliance on professional literature (e.g., Murphy, 1962; R. White, 1962; Baumrind & Black, 1967) and on advice from teachers and other outside clinicians. We tried to satisfy in the CBT's development several other criteria besides generally accepted standards for social-emotional competence. Since it would be used in our home program and later in school by many persons, it had to be applicable to children from two to twelve in home or school settings; it had to be easily understood and non-abstract wherever possible; and it had to be brief, no more than a page long. We ended up with a 20 item measure, well tested for reliability and validity (Levenstein, 1976), and anticipating in content many of the 29 social competencies later suggested by a national task force (Anderson & Messick, 1974). All 20 items appear in abbreviated form on Tables 1 through 4, grouped for convenience in rows at the left side under the categories of Task Orientation, Cognitive Orientation, Responsible Independence, Social Cooperation, and Emotional Stability.

"Parent and Child Together" was a 20 item instrument based on Diana Baumrind's distinguished work at Berkeley, one of the few successful attempts to tease out the parental correlates of outstanding social competence, in this case the competence shown by some 4 year olds in a Berkeley nursery school (Baumrind, 1967). Although the parents in her study were quite different from Verbal Interaction Project parents (they were described as "middle class, well educated") -- we decided to adapt many of her findings into scales for our own observations, retaining in large part Baumrind's categories and specifics of parental behavior. Like the CBT, the PACT was planned for maximum usefulness, with attention to its practical aspects as well as to test construction considerations. Mainly it had to be easily understood and short. Its final 20-item form has internal reliability and correlates well enough with other logically related measures to indicate its validity. The 1972 Cohort was the first cohort to be measured on the final form of the PACT and its explanatory "Item Guide".

The 20 PACT items are categorized under:

1) Verbal Interaction (column headings in Tables 1 to 4)

Responds verbally to child's request.
Verbalizes expectations of child.
Verbalizes approval of child.
Tries to converse with child.
Verbalizes reasons for obedience.

2) Nurturance

Shows warmth toward child.
Verbalizes affection toward child.
Satisfies child's needs, signalled verbally or non-verbally.
Seems comforting to child.
Uses positive reinforcement.

3) Encouragement of Autonomy

Discourages child's over-dependence.
Encourages child's understanding reasons for directives.
Actively encourages child's independence.
Trains child for self-direction.
Seems prepared to respect child's negative reactions to directive.

4) Parental Controls

Tries to enforce directives.
 Refrains from scolding.
 Directive gains child's attention.
 Persists in enforcing directives.
 Is firm with child.

Observations at Beginning and End of Mother-Child Home Program

The children and their parents were rated globally on the Child's Behavior Traits (CBT) and Parent and Child Together (PACT) on the basis of observations of their first six Home Sessions in the program and at the end, based on their next-to last six Home Sessions. They were rated by their "Toy Demonstrators," whose function as home visitors in the program can best be understood by a brief description of the program itself. (More details are in Levenstein, 1977.)

The Program

The Mother-Child Home Program was (and is) a voluntary, "no strings attached", home-based early education program for low income two to four year olds and their mothers or mother surrogates. Its aim was to promote cognitive and later social-emotional development through enhancing the mother's interactive behavior, especially verbal interaction, as suggested by many studies around the time it began in 1965 (e.g. Bee, 1969; Bronfenbrenner, 1968; Brown, 1958; Bruner, 1964; Datta and Parloff, 1967; Hunt, 1961, 1969; John & Goldstein, 1964; Phenix, 1964; Sapir, 1962; White, 1962) and supported later by studies like those of Clarke-Stewart (1973) and Elardo et al (1975). The Toy Demonstrator was a home visitor who modeled interactive skills in home play sessions around gifts of toys and books. Like the CBT and the PACT, the program's model was health, not deficiency. Central to the method was complete avoidance of teaching or counseling. Our basic assumption about the mothers was that they were competent to run their own lives. Supervisors stood by to offer help only if requested by the mother.

The mother-child dyad was in the program for two school years, starting when the child was about two. The half hour home sessions occurred twice a week for 7 months within each of the two years, for a total of 46 play sessions a year. Each week a new, carefully selected toy or book was presented to the dyad. These were the "curriculum materials" around which a fun oriented cognitive curriculum was built -- a developmentally appropriate Guide Sheet written for each new toy or book around a list of concepts for the child to learn. The use of the Guide Sheets was demonstrated (modeled) for the mother by the "Toy Demonstrators" -- minimally screened, paid or volunteer women with a wide range of education and background. Some were former mother participants; some were former teachers. Almost all made good Toy Demonstrators, so long as they didn't try to teach, give advice, or become a close friend of the mother. It was our belief, supported by the program's popularity and by our results, that in a home based program, "less is more", to quote a famous architect. The Toy Demonstrators were taught not only program techniques but also -- because we were going into peoples' homes -- rules of confidentiality, and techniques to protect the family against any unintended but possible coerciveness or intrusiveness on the part of the program.

It was these Toy Demonstrators, trained to be sensitive and observant, who recorded the PACT and CBT data on the mothers and children at the beginning and end of the program. They were familiar with both instruments, because the PACT and CBT were used in supervision to teach the program's affective curriculum.

Observations in First Grade School Classroom

Two years after they graduated from the Mother-Child Home Program, and after they had entered elementary school, the children, now six years old, were again rated on the Child's Behavior Traits. This time the observers were their first grade classroom teachers, who rated the 39 children left from the original 45 on the basis of their social-emotional classroom competence during the school year from September, 1976 to March, 1977.

Data Management and Analysis

The item and summative (total) scores for the CBT and PACT ratings of the 1972 Cohort from both time points, at age four and at age six, were entered into a computer. The mean total CBT scores and all CBT items were correlated with all mean PACT items and PACT total scores (along with other variables), using Pearson's product moment correlations. Only coefficients significant below the .05, .01, and .005 levels of probability in the correlation matrices are reported.

Scope of this Report

Since this report must be kept within reasonable boundaries, and since it is the first to emerge from this correlational study, I will confine myself to a discussion of the relation of maternal verbal interaction to the child's social-emotional behavior. This is the kind of parental behavior we have tried most systematically to foster through the Mother-Child Home Program and was also found to yield the most correlations of all PACT items. We shall examine in some detail the links between the five PACT items comprising parental verbal interaction and all 20 of the child's social-emotional coping skills. We shall look at these associations as they became manifest when the children were four years old and just finishing the program, and we shall search to see if any still remained in relation to the children's social-emotional behavior when they were six years old and almost all of them just past the middle of first grade. The summary of what we found is in Tables 1, 2, 3, and 4.

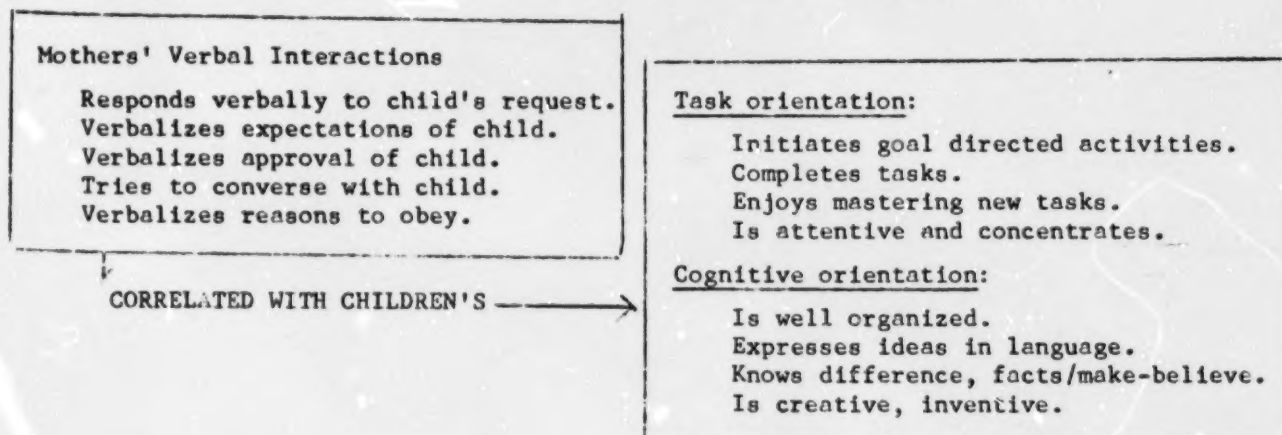
The Parent-Child Network Made Visible

At Children's Age Four

When the 1972 program children were four years old, had been in the program for two school years with their mothers, and were just coming to the end of their program experience, the associations between their social-emotional competence and their mothers' verbal interaction with them were very pronounced. Almost every one of the 20 items on the Child's Behavior Traits correlated significantly with at least two aspects of the mothers'

verbal interactions with the children, and usually it was more. There was a virtual flood of significant relationships between the 20 social-emotional competencies and the five varieties of mothers' verbal interaction as seen in the PACT item scores.

This was especially striking in regard to the Task Orientation and Cognitive Orientation categories of child's social-emotional skills. The correlations of the eight coping skills grouped under these headings, with the mothers' verbal interaction, are recorded in Table 1. Almost every one of these eight intellectual competencies of the four year olds was linked to every one of the mothers' five verbal interaction behaviors, thus:



The children's coping with social responsibilities and inner emotional demands was not as frequently correlated with mothers' verbal interaction as was their competence with intellectual tasks and ideas. Table 2 contains the correlation of mothers' verbal interaction with three categories of such coping: Responsible Independence, Social Cooperation, and Emotional Stability. Table 2 shows that every one of the 12 coping skills grouped under these headings correlated with at least two of the five maternal verbal interaction behaviors. The major maternal verbal interactions and associated child coping skills are:

Mothers' Verbal Interactions

Responds verbally to child's request.
 Verbalizes expectations of child.
 Verbalizes approval of child.
 Tries to converse with child.
 Verbalizes reasons for obedience



CORRELATED WITH CHILDREN'S

**Responsible Independence**

Accepts, asks for help.
 Protects own rights.
 Is self-confident.
 Refrains: physical risks.

Social Cooperation

Refrains: physical aggression.
 Cooperates with adults.
 Follows rules.
 Puts own needs second.

Emotional Stability

Is cheerful and content.
 Is spontaneous, not explosive.
 Tolerates frustration.
 Has no sudden mood changes.

The Verbal Interaction Project correlations at four years were similar to those found at the same age by Baumrind with more advantaged families. However, it is well to be reminded that part of this wealth of correlations at age four in our own research may have resulted from "halo" effects because the same Toy Demonstrator rated both mother and child. It should certainly be emphasized that it is not possible to establish a clear cause and effect relationship among these correlations existing concurrently, at the same point in time.

No more -- but also no less -- has been demonstrated than the possible existence of a network of concurrent parent-child behaviors, each probably influencing the other. The children were four years old, and both mothers and children were just completing their two school years in the Mother-Child Home Program. Thus made visible in these low-income, low-schooled families were threads of a parent-child network which might prove genuine enough and strong enough to form a lasting social-emotional support system for the child.

For if the mother's verbal communication truly interacted so functionally with the child's social-emotional competence at age four, perhaps it could continue to do so into the child's school years. Perhaps the parent-child

network found in earlier years could be the underpinnings for the child's constructing in first grade the foundations for his later school learning. For this the mothers' verbal interaction contributions to the network when the children were four would have to relate significantly to the children's social-emotional competence two years later, when the children were six years old, in the first grade classroom, and rated by an independent observer.

The Parent-Child Network at Children's Age of Six Years (First Grade)

The same PACT scores reflecting mothers' parenting, which formed part of the network when the children were four, were used for the correlations with the 1972 Cohort's social-emotional behavior at age six. But the children's age six CBT social-emotional scores came out of quite different circumstances than their age four ratings:

- 1) The children were, of course, at a much later stage of social-emotional, cognitive, and physical development.
- 2) The same social-emotional skills observed (at age four) in the home were rated (at age six) in the school classroom.
- 3) For the first grade ratings, the child was observed among classmates, not alone with the mother or other family members, as he or she was at age four.
- 4) The CBT ratings were by the children's school teachers, not by the program's Toy Demonstrators. The teachers had a page of written information about the Verbal Interaction Project and a written guide to scoring the CBT, limited acquaintance with the project staff member who distributed the CBT, and no association with the Verbal Interaction Project or knowledge of whether the child had been a Program or no-Program subject in the Project.

Thus the children's social-emotional skills at age six were judged in a different setting, within a classroom group, by an observer almost completely independent of the Verbal Interaction Project, and at a different stage of development from the ratings at age four.

Under such widely differing circumstances, it seemed unlikely that the mothers' verbal interaction observed at the child's age of four would still be visible in association with the child's social-emotional competence at the age of six. Yet the influence of the mothers' earlier verbal interaction did become visible in 27 correlations with the children's social-emotional competence at the later age, in the first grade classroom, a little more than a third of those seen at age four.

The enduring strands of the mothers' part of the parent-child network can be clearly seen in Tables 3 and 4. These tables follow exactly the format of Tables 1 and 2, which were filled in with mother-child correlations from two years before. But the CBT categories and items on the left hand rows of Tables 3 and 4 came out of the classroom, not out of the home, and were scored by teachers, not by Toy Demonstrators. The PACT scores for the mothers' Verbal Interaction used for the correlations with the children's classroom social-emotional scores, in the right hand columns, were, of course, exactly the same as two years earlier. Instead of these indicating that there were no significant correlations with classroom CBT scores, with columns being totally blank, as one might reasonably expect, 27 significant correlations are to be found on Tables 3 and 4. Mothers' verbal interaction at the child's age four can be said to predict, probably to influence, possibly to cause the children's first grade social-emotional competence in 27 visible ways.

The word "cause" must still be used cautiously. It is incontrovertible that the mothers' verbal interaction behavior with the children at age four preceded the children's classroom behavior at age six. But it is not impossible that the six year old behavior resulted not alone from the mothers' prior behavior but from a continuing network of interacting parent-child behaviors, or other unknown factors. For instance, in a recent Science article the lead and cadmium content in hair samples reliably discriminated between learning disabled and normal children (Pihl, 1977)

However, it is more parsimonious to accept, from the evidence presented here, the strong influence on the graduates' competence in first grade of the mothers' verbal interaction with them at age four and to consider those verbal interactions as precursors of the children's first grade social-emotional competence. Closer examination of Tables 3 and 4 reveals that in the main only three kinds of antecedent verbal interaction had this continuing influence: responds verbally to child's request, tries to converse with child, and verbalizes reasons for obedience. Their influence is visible and pervasive on four out of five categories of the children's social-emotional skills listed on Tables 3 and 4: Task Orientation, Cognitive Orientation, Responsible Independence, and Emotional Stability. The fifth CBT category is "Social Cooperation"; the four skills listed under this heading (refrains from physical aggression; cooperates with adults; follows rules; puts own needs second) show no relationships with the mothers' prior verbal interaction.

Two of the three maternal verbal interactions that predict the child's later competence involve the give and take that Ira Gordon has felicitously called the "Ping-pong" interaction between parent and child (Gordon, 1977). The details of the mother's contributions to this exchange are described in the PACT Item Guide as follows:

Mother tries to converse with the child.

"Tries to conduct conversation. Responds to child's utterance (whether or not it is a question) with a comment, question, or an association to what the child has said. The conversation may be long or short, and it may or may not contain information for the child. The 'conversation' may be more of an accompaniment to the child's activity than an actual verbal give and take."

One example is the following dialogue:

Child: "Green".
 Parent: "Yes, it's a green block. And something you're wearing is green too."
 Child: "Green".
 Parent: "Well, look at your shirt. What color is that?"

Here is another example:

Child: "I'm building (tower of blocks) up, up, up!"
 Parent: "Yes, up it goes, up, up, up!"
 Child: "Gonna crash!"
 Parent: "Bang!"

Mother responds verbally to the child's verbal or non-verbal request for attention.

"Uses words to show that she is aware of what the child wants, and that she will either grant his request or will not do so. Doesn't ignore the child's bid for attention."

An example is that the mother says, "Yes, I see the dog," when child points or exclaims, "Dog!" while looking at a book illustration.

The last of the three predictive verbal interactions gives the child a reality base for his compliance with the mystifying laws that rule his world. We quote again from the PACT Item Guide.

Mother verbalizes the reasons for the child's obedience.

"Explains why it is necessary for child to perform, or desist from, a particular action."

An example is that:

When she suggests that the child put the blocks into the block can, she adds that in that way, the pieces won't get lost.

One common theme of these three maternal verbal interaction components of the enduring network is the mother's response to the child's reality with words, with language which symbolizes and enlarges the child's interchanges with the world around him. Another theme is her implicit recognition of the child as a unique individual, a person-orientation more functional for social-emotional growth than the status-orientation often characteristic of low-income families (Hess and Shipman, 1965). The effect of her contributions is lasting, and their power is still visible at age six in relation to competencies which will especially help him to develop further in his coping skills.

The mother has contributed to the child being, at age six, cheerful, spontaneous, self-confident, ready to protect his own rights appropriately, yet willing to seek help when necessary. She has contributed to the child's being solidly based in reality yet creative and inventive, to his having the maturity to be well organized and able to express ideas in language and yet also to show joy in mastering tasks.

It seems clear that the mother has made a contribution not only to the child's social-emotional competence in school but to the chances for his or her maximum development as a human being.

Reflections on the Parent-Child Network

In sum, we have found considerable empirical support in one group of mothers and children for the existence of a parent-child network, a demonstration first of the mutual influence of child and parent upon each other at the same point in time, and second, of the parent's influence on her child's later social-emotional coping skills in school. We have found the verbal interaction behaviors of mothers to be significantly linked to the competencies of their children at age four at home and having an influence enduring to the child's age of six. The 1972 Cohort may be idiosyncratic as a group in some unknown way, but the group is large enough to suggest that the results are generalizable.

The network can be strengthened by parents and by special programs for parents and for children. This inevitably means very hard work on the

part of parents and teachers of children with communication disorders, but at least our demonstration of the network's existence promises rewards for both adults and children.

The promise must be tempered by a reminder that we don't know much about the children's individual contributions to the network. We can't know in what ways and to what degree the children themselves stimulated their parents' behavior almost from the moment of birth. Certainly, as previously indicated, we can't be certain which came first in the parent-child behaviors when the child was four years old, in spite of the mother's existence prior to the child's. Babies come into the world well equipped with life savers to get positive responses from parents: cries and coos, smiles and wriggles, gazes and giggles -- a tremendous repertoire to feed into the reciprocal relationship. We can say for sure that the network is the result of dynamic interaction from birth between parent and child behaviors. And we can say that in the data we have reviewed here, there is a very strong probability that the mothers' good parenting at the children's age four was a source of the children's social-emotional competence in the first grade of school when they were six.

It should also be remembered that these data were from a group of mother-child dyads who, though of low income, lived in homes well supplied by our intervention home program with toys and books rich in verbal interaction possibilities and with a joyous curriculum for using them.

With these caveats in mind, let us watch a mother and four year old child in interaction on videotape. They have just finished the Mother-Child Home Program. A few minutes with this mother and child will illuminate better than any words the correlations in Tables 1 through 4.

(Show first five minutes of MIB videotape of mother-child dyad)

The interaction of this mother and child illustrates the parent-child network we have been discussing. Perhaps these representatives of one educationally vulnerable population (the low income group) bear a message which will be helpful to another, the special group of children with communication problems which is your interest and is the focus of this conference.

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Verbal Interaction Project
PARENT CHILD NETWORK: VERBAL INTERACTION COMPONENT

Table 1

Correlations of Mothers' Home Verbal Interaction
with Children's Task and Cognitive Orientation, at Child's Age 4
(Pearson's r , N = 45)

Child Task and Cognitive Orientation at Age 4 (home observations)	Mothers' Verbal Interaction at Child's Age 4				
	Responds Verbally to Child's request	Verbalizes expectations of child	Verbalizes approval of child	Tries to converse with child	Verbalizes reasons for obedience
Task Orientation					
Initiates goal directed activities	.37*	.31*	.35*	.50***	.48***
Completes tasks	.33*		.52***	.41***	.47***
Enjoys mastering new tasks	.38**	.37*	.49***	.43***	.36*
Attentive & concentrates		.33*	.48***	.43***	.50***
Cognitive Orientation					
Well organized	.43***	.38*	.45***	.54***	.52***
Expresses ideas in language	.57***	.30*		.52***	.42***
Difference, facts & Make believe	.37*	.37*	.39**	.34*	.43***
Creative, inventive	.32*	.33*	.41**	.49***	.48***

* $p \leq .05$

** $p \leq .01$

*** $p \leq .005$

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Table 2

Correlations of Mothers' Home Verbal Interaction
with Children's Independence, Cooperation, Emotional Stability, at Child's Age 4
(Pearson's r , N = 45)

Child Independence, Cooperation, and Emotional Stability At Age 4 (home observations)	Mothers' Home Verbal Interaction at Child's Age 4				
	Responds verbally to child's request	Verbalizes expectations of child	Verbalizes approval of child	Tries to converse with child	Verbalizes reasons for obedience
Responsible Independence					
Accepts, asks for help		.31*	.38**		
Protects own rights				.39**	
Self-confident	.42***	.47***		.30*	
Refrains physical risks	.38***	.40**			.37*
Social Cooperation					
Refrains: physical aggression	.33*	.40**			.32*
Cooperates with adults	.31*	.58***	.37**		.45***
Follows rules	.32*	.65***	.38**		.41**
Puts own needs second		.34*	.44***		.40**
Emotional Stability					
Cheerful and content	.38**	.32*			
Spontaneous, not explosive	.32*	.30*			
Tolerates frustration		.44***	.50***	.34*	.41***
No sudden mood changes	.37**	.48***	.34*		.41**

* $p \leq .05$

** $p \leq .01$

*** $p \leq .005$

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Table 3

Correlations of Mothers' Home Verbal Interaction at Child's Age 4
with
Child Task and Cognitive Orientation in First Grade at Age 6
(Pearson's r , $N = 39$)

Child Task and Cognitive Orientation in First Grade at Age 6 (school classroom observations)	Mothers' Home Verbal Interaction at Child's Age 4				
	Responds verbally to child's request	Verbalizes expectations of child	Verbalizes approval of child	Tries to converse with child	Verbalizes reasons for obedience
Task Orientation					
Initiates goal directed activities					
Completes tasks				.35*	
Enjoys mastering new tasks	.48***			.54***	.36*
Attentive & concentrates					
Cognitive Orientation					
Well organized	.39*			.41**	.35*
Expresses ideas in language	.48***			.48***	
Difference, facts and make believe	.61***	.34*		.61***	.52***
Creative, inventive	.40*			.52***	.44***

* $p \leq .05$

** $p \leq .01$

*** $p \leq .005$

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PARENT-CHILD NETWORK: VERBAL INTERACTION COMPONENT

Table 4

Correlations of Mothers' Home Verbal Interaction at Child's Age 4
with
Child Independence, Cooperation, Emotional Stability in First Grade at Age 6
(Pearson's r , N = 39)

Child Independence, Cooperation, and Emotional Stability in First Grade At Age 6 (school classroom observations)	Mothers' Verbal Interaction at Child's Age 4				
	Responds Verbally to child's request	Verbalizes expectations of child	Verbalizes approval of child	Tries to converse with child	Verbalizes reasons for obedience
Responsible Independence					
Accepts, asks for help	.38*			.38*	
Protects own rights	.33*				
Self-confident	.47***			.49***	
Refrains: physical risks					
Social Cooperation					
Refrains: physical aggression					
Cooperates with adults					
Follows rules					
Puts own needs second					
Emotional Stability					
Cheerful and content	.33*			.39*	.33*
Spontaneous, not explosive	.42**			.47***	.34*
Tolerates frustration					
No sudden mood changes					

*p ≤ .05

**p ≤ .01

***p ≤ .005

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